

Claims as Pending

1. A method for determining whether a test compound is capable of affecting cell division, said method comprising:

a) contacting said test compound with isolated estrogen receptor beta (ER β) and mitosis arrest deficient 2 (MAD2), or a binding fragment thereof, under conditions in which ER β and MAD2, or a fragment thereof, have formed, or are able to form, a complex; and

b) determining whether said test compound affects said ER β /MAD2 complex or complex formation, as an indication that said test compound is capable of affecting cell division.

2. The method of claim 1, wherein said MAD2 is encoded by a nucleic acid molecule comprising the sequence set forth in SEQ ID NO: 3.

3. The method of claim 1, wherein said determining is done *in vitro*.

6. The method of claim 1, wherein said ER β additionally comprises glutathione-S-transferase (GST) and said complex or complex formation is determined using a GST-fusion protein interaction assay.

9. A method for determining whether a test compound is capable of affecting cell division, said method comprising:

a) contacting said test compound with a GST-ER β -fusion protein and MAD2, or a binding fragment thereof, under conditions in which said GST-ER β -fusion protein and MAD2, or a fragment thereof, have formed, or are able to form, a complex; and

b) determining whether said test compound affects said GST-ER β -fusion protein/MAD2 complex or complex formation, as an indication that said test compound is capable of affecting cell division.

10. A method for determining whether a test compound is capable of affecting cell division, said method comprising:

a) contacting said test compound with an isolated ER β polypeptide comprising the amino acid sequence set forth in SEQ ID NO: 7 and MAD2, or a binding fragment thereof, under conditions in which said ER β polypeptide and MAD2, or a fragment thereof, have formed, or are able to form, a complex; and

b) determining whether said test compound affects said ER β polypeptide/MAD2 complex or complex formation, as an indication that said test compound is capable of affecting cell division.

11. The method of claim 10, wherein said MAD2 is encoded by a nucleic acid molecule comprising the sequence set forth in SEQ ID NO: 3.

12. The method of claim 10, wherein said ER β polypeptide additionally comprises GST and said complex or complex formation is determined using a GST-fusion protein interaction assay.